

**FAIRFIELD AREA SCHOOL DISTRICT
SPECIFICATIONS FOR DIGITAL
SURVEILLANCE EQUIPMENT**

GENERAL REQUIREMENTS

- A. **The Fairfield Area School District invites sealed bids for providing digital surveillance equipment to include 10 interior IP cameras, 24 exterior IP cameras and 1 network video recorder. Bids are due in the Business Office, located at 4840 Fairfield Road, Fairfield Pa. By 1:00 PM prevailing time on Wednesday April 17, 2019 at which time they will be publicly opened and read. Specifications for this project may be obtained from the school district website at www.fairfieldpaschools.org or contact Howie Kessel, Maintenance Director at 717-642-2042.**

- B. The School Board reserves the right to reject any or all bids.

- C. Only bids for the complete project will be considered.

- D. Bids may not be modified after submittal. Bids may be withdrawn at any time prior to opening. Any bid received after the time and date specified will not be considered.

- E. The bid price shall include all costs associated with the project.

- F. All bids must be submitted in sealed, opaque envelopes clearly marked “**Digital Surveillance Equipment**” on the front of the envelope.

- G. All bids must be signed by a responsible company representative, on the submission form included with the packet.

- H. New equipment must be compatible with the school district’s existing System Galaxy software application and the existing video management software.

GENERAL SPECIFICATIONS

PART 1 GENERAL

SYSTEM DESCRIPTION

Existing Software Application is System Galaxy software communicating with 635 Series Access Control Panels (ACPs) and Discovery Series NVR's.

Video Monitoring of doors and alarm points shall be provided when access is requested or a door is violated. The system interface between the Access Control System and Video Surveillance System shall utilize a TCP/IP connection.

1. The Video Monitoring interface shall be compatible with the Discovery NVR.
2. **Video and Camera Control** shall be supported within System Galaxy.
 - a. System shall be able to associate cameras with doors, inputs/alarm points, elevator doors.
 - b. System shall support manually and automatically calling up video and shall be capable of playing live video from system-linked points when a system alarm is generated.
 - c. System shall be able to retrieve associated video from historical event report.

SYSTEM DESCRIPTION FOR DIGITAL SURVEILLANCE

The surveillance system shall be capable of operating in a multi-system configuration using LAN/WAN connection.

3. The Digital Surveillance Software shall be capable of operating with System Galaxy software and security monitoring stations; and shall be capable of producing court-admissible video evidence for use by officials and law enforcement.
4. The System shall be capable of supporting up to a **minimum of 64 IP cameras** in various frame-rate speeds at up to 30 frames/second per camera.
 - a. The camera connectivity and frame-rate performance shall use the identical application software.
5. Systems shall be interchangeable and be connectable through the same Remote Access Software within a security management system, regardless of the scale or system configuration.
6. The System shall be configured as a rack-mount model for indoor use in a secure location that maintains the appropriate environment for computer equipment.
7. The Application software shall allow multiple systems to be concurrently accessed by remote users from a single screen.
8. The Application software shall allow multiple systems to intercommunicate using LAN/WAN connections without additional hardware or software.

The Network Video Recorder (NVR) shall offer current digital recording technology, product reliability, security, ease of use, and customer support structure.

9. NVR shall be a 64 channel model licensed for a minimum of 48 channels with a minimum of 18TB internal hard drive storage with a system-wide recording rate up to 960 IPS (NTSC or PAL).
10. The Network Video Recorder (NVR) shall be a complete network video

recording solution. The combination of motion detection features, email alarms, advanced search capabilities, full megapixel support on all channels, and specialized remote monitoring technologies shall provide a highly robust and reliable system.

RELATED WORK

SUBMITTALS

Product Data: Manufacturer's data sheets on each product to be used,

QUALITY ASSURANCE

Manufacturer Qualifications:

11. Company specializing in manufacturing the products specified with minimum 30 years documented experience.
12. Manufacturer shall be capable of providing through its resellers a sole-source, turn-key solution including, but not limited to system server, customary cameras, wiring, networking components, and other peripherals essential for operation of the solution.
13. Manufacturer shall be directly accessible to end users for advice on service, support, and warranty issues. Manufacturer shall maintain support information for public access on a web site and facilitate contact with technical resources.
14. Software updates shall be freely accessible for download from the manufacturer's web site and available at no charge with a valid maintenance agreement. Terms for release of software revisions offering substantially new capabilities shall be offered for sale or at no cost with a valid maintenance agreement.
15. Manufacturer's operation manual and training tutorials shall be directly accessible through the software main menu and provided on PC-compatible CD for installation on any personal computer. The manual and tutorial shall provide for intuitive topic search and help for system operation and function explanations. Additional computer support and help utilities shall be included on the system server main menu to assist in managing functions such as multi-media control, file management, disk and media management, file authentication, backup and more.

Installer Qualifications:

16. **Company specializing in installing the Products specified in this section and Related Work with minimum five (5) years documented experience. Experience shall include projects with access control and surveillance systems of similar scope and magnitude of the project. Company shall be a Certified Dealer/Value Added Reseller of the manufacturer.**

WARRANTY

Manufacturer's Warranty of Security/Surveillance System:

17. Provide a full performance and material guarantee for two years from the final acceptance of the manufactured hardware. .

18. Technical support shall be available for 24 hours per day and 7 days per week to all Certified Dealers/Value Added Resellers.

Manufacturer's Warranty of Digital Surveillance System:

19. The digital recorder shall come with a minimum 3-year manufacturer's warranty with the **1st year including advance replacement service**. Each unit shall have the purchase option to upgrade the warranty period up to 5 years and 2 years of advance replacement service.
20. Technical support shall be available for 24 hours per day and 7 days per week to all integrators and Certified Dealers/Value Added Resellers free of charge.
21. Certified Dealer/Value Added Reseller shall include a 3-year conditional warranty and shall offer additional services such as manufacturer system configuration.
22. Manufacturer's warranty shall include 30-day exchange for new equipment from the Dealer/VAR's date of invoice plus one-year depot parts and labor repair for systems not having had the terms of the warranty voided. Extended warranty contracts shall include extended term and hot-swap provisions.

PART 2 PRODUCTS

MANUFACTURERS

Acceptable Manufacturer: Galaxy Control Systems, which is located at: 3 North Main Street; Walkersville, MD 21793-0158; Toll Free Tel: 800-445-5560; Tel: 301-845-6600; Fax: 301-898-3331 or approved equal.

DIGITAL SURVEILLANCE SYSTEM

General Description: The surveillance system server and software capabilities shall consist of the following components and facilitate camera connection, administer the control program, create sequential and multiplexed camera displays, store recorded video, provide for computer assisted search and playback, and facilitate for authorized connection from remote computers.

1. System: Discovery Series Video Solution as manufactured by Galaxy Control Systems.

Installation of the system shall include battery backup and power conditioning for server with auto-recovery upon restoration of main power.

Operating Specifications for the NETWORKED Digital Recorder NVR – the specifications in this paragraph and subparagraphs apply to the Networked NVR.

2. Environmental Conditions: the Digital Recorder shall be designed to operate under the following environmental specifications:
 - a. Operating Temperature: 40°F to 104°F (5°C to 40°C) non-condensing.
3. Power Requirements: Components shall have the following electrical specifications:
 - a. Power Requirement: 115 – 230 VAC
 - b. Output over voltage protection
4. Product Label Requirements:
 - a. The digital recorder shall have the RoHS certification all clearly labeled on the outside of the box.
5. Dimensions (H x W x D): 6.9" x 16.9" x 26" (176 mm x 430 mm x 660 mm)
6. Weight: 80 lbs. (36.3 kg)

NVR Networked Digital Recorder - Operational Requirements: The network video recorder shall include, as a minimum, the following features/functions/specifications. The network video recorder shall:

7. Be fully assembled in the U.S.A.
8. Include a minimum Intel Dual Core i3 processor with the ability to expand to an Intel Quad Core i7 processor performance upgrade on the 16- and 32-channel models.
9. Include an Intel Quad Core i7 processor on the 64-channel model.
10. Include 4 Gigabytes of system memory with the ability to expand to 8 Gigabytes of system memory on the 16- and 32-channel models.
11. Include 8 Gigabytes of system memory on the 64-channel model.
12. Include two onboard 10/100/1000 Network Interface connections offering stability, security, and allow the user to easily modify the system network settings.
13. Be optimized and support the Windows-7 Embedded Operating System.
14. Provide recording support for high-resolution Megapixel IP video, selectable by user, on all video channels.
15. Support the recording of up to sixteen (16) audio streams dependent on the IP device (cameras and encoders) capabilities.
16. Provide remote capabilities including remote for Windows, remote for Macintosh, multi-site management software and mobile applications for Apple and Android devices.
17. Include the ability to unlock additional IP camera licenses offering up to a combined total of 64 IP cameras per NVR with a maximum recording throughput of 400 Mbps in a RAID 5 configuration and 200 Mbps in a single drive configuration.
18. Include support for the ONVIF 1.01 and 1.02 core specifications. Full list of ONVIF compliant and tested devices: www.galaxysys.com
19. Support a majority of IP cameras from major manufacturers including:
 - a. OpenEye
 - b. ACTi
 - c. Arecont
 - d. Axis
 - e. IQ Invision
 - f. Panasonic
 - g. Toshiba
 - h. Samsung
 - i. Sanyo
 - j. Sony
 - k. VivoTek
 - l. Full list of IP compatible devices: www.galaxysys.com
20. Provide a Live Digital Zoom function for IP cameras that allows the operator to zoom in and out of a live picture.
21. Support static IP and DHCP IP addressing through configurable TCP/IP settings.
22. Include DDNS (Dynamic Domain Name System) for free for the life of the product. DDNS shall allow the operator to use a URL address instead of a static IP address.
23. Be capable of recording up to 30 IPS on a single channel in an environment where all channels are being utilized. The operator shall have

- the ability to assign each channel a specific recording rate varying from 1 to 30 IPS.
24. Be able to assign each channel a different recording resolution and frame rate based on the network video device capabilities.
 25. Offer support for M-JPEG, MPEG4, or H.264 network video devices. Shall allow multiple compression formats to be used simultaneously.
 26. Allow the user to adjust the resolution, quality, motion sensitivity, and number of images per second each camera will record. These adjustments shall be configurable based on the network video device capabilities.
 27. Offer the following on-board hard drive capacity options with sixteen removable hard drive bays that include exceptional fan cooling, 3.0 Gbps and large capacity HDD (3 Terabyte drives) support:
 - a. 2.0 Terabytes
 - b. 6.0 Terabytes
 - c. 12.0 Terabytes
 - d. 18.0 Terabytes
 - e. 24.0 Terabytes
 28. Non-RAID configurations will only use high performance AV (Audio/Video Surveillance) rated hard drives engineered for reliability and 24x7 "always on" "non-RAID" environments.
 29. RAID configurations will only use high performance enterprise RE (RAID Edition) rated hard drives engineered for reliability and 24x7 "always on" "RAID" environments.
 30. Be housed in a high performance 4U metal chassis. The chassis shall be designed to fit into a 19" EIA rack. The front panel shall come with the ability to be locked by a key.
 31. Include a standard Slide Rack Rail kit for server rack mount installations.
 32. Provide exceptional internal cooling through five high output 80mm fans mounted in the center of the chassis, two high output 80mm fans mounted in the rear of the chassis and front/rear cooling intakes for maximum in/out cooling.
 33. Have the ability to easily backup important video to an external media location, CD/DVD disk, or a USB Drive. The recorder must not stop recording during the backup process. To ensure the integrity of data, the digital recorder shall use a proprietary viewer that can detect image tampering.
 34. Allow the inclusion of backup viewer software during the backup of media to allow viewing of the proprietary video from any location.
 35. Include a standard DVDRW drive capable of Read/Write/Burn at the following speeds: 24x DVD±R Burn, 18x DVD±R Read, 8x DVD+RW, 6x DVD-RW, 8x DVD±R9, 12x DVD-RAM, 48x32x CD-R/RW to which the operator may backup video in its proprietary format or in AVI format.
 36. Have the ability to span backed up recorded video over multiple DVDs.
 37. Include a minimum of the following front panel controls and LEDs:
 - a. DVD-RW drive
 - b. Hard drive activity LED
 - c. Power LED
 - d. Two 2.0 USB ports
 - e. Power switch
 38. Include a minimum of the following rear-panel connectors:
 - a. Power input

- b. Two high-speed USB 3.0 inputs
 - c. Six USB 2.0 inputs
 - d. HDMI
 - e. DVI-D
 - f. VGA
 - g. Display Port
 - h. Two 10/100/1000 RJ-45 Network Jack
 - i. Line in / Speaker out – RCA
 - j. Include the following components:
 - k. USB Mouse
 - l. USB Keyboard QWERTY
 - m. NVR System Image Disc
 - n. Software Accessory Disc
 - o. Power Adapter
 - p. Rack mount attachments with screws
 - q. NVR chassis front bezel and door key
 - r. User Manual (Digital format)
 - s. HDMI to DVI adapter
39. Offer the following accessory hardware components (add-ons):
- a. On the 16 and 32 channels models: Factory or Field upgradable Quad Core i7 Processor. Expands system memory to 8 Gigabytes.
 - b. Fully equipped internal RAID 5 configuration capable of full data redundancy and exceptional management capabilities. There shall be a separate dedicated RAID 5 ACP Card that will provide off-loaded XOR parity calculation. RAID parity calculations shall be handled on the RAID 5 card exclusively and shall not utilize resources from the motherboard's on-board processor. The RAID 5 configuration shall only use high performance enterprise level hard drives manufactured specifically for RAID environments. Recording throughput maximum will be 400Mbps with a minimum guaranteed value of 300Mbps during RAID rebuild conditions.
 - c. Field storage upgrades that include internal hard drive capacities ranging from 1 terabyte to 4 terabytes.
 - d. Internal iSCSI upgrade for separate external iSCSI storage option.
 - e. 4U rack mountable external iSCSI storage option capable of RAID 5, 6, and 10 in the following storage capacities:
 - 1) 16.0 Terabytes
 - 2) 24.0 Terabytes
 - 3) 32.0 Terabytes
 - 4) 48.0 Terabytes
 - 5) 64.0 Terabytes
 - f. Solid State Drive (SSD) capable of operating as a BOOT drive in a RAID configuration or in a Single drive configuration. The SSD shall be exclusively dedicated to the Operating System. No Video will be allocated to the solid state drive for the purposes of video storage and archiving. This Solid State Drive shall be internal to the NVR and should not replace any of the system hard drives. Overall storage capacity shall not be decreased by adding an SSD hard drive.

- g. Dual Redundant SSD BOOT drive in a RAID 1 (Mirror) configuration.
- h. A single or dual port 10/100/1000 Gigabit Network Interface Card.
- i. Serial RS-232 expansion capabilities providing up to 4 independent Serial connections for Joystick control or POS connectivity.
- j. Dual Redundant 820W Power Supply Unit

NVR RECORDING CAPABILITIES – The NVR recording capabilities shall provide the following characteristics/features/functions. The NVR recording capabilities shall:

- 40. Provide support for 360° view cameras. Digital pan, tilt and zoom shall be supported in both live and recorded video.
- 41. Provide an advanced Dual Stream feature allowing the user to record an HD stream while transmitting a low resolution stream to remote/VMS clients. The Dual Stream shall support H.264, MJPEG or MPEG4 codecs.
- 42. Provide an iFrame Only live view feature that reduces CPU load allowing the user to enable up to 16 channels of live view IP HD recording. iFrame shall support H.264 and MPEG4 codecs.
- 43. Be able to run Point of Sale Software. The system shall have the capability to overlay text from POS systems directly onto the video and maintain an index of transaction data associated with the video for indexing and searching.
- 44. Be able to natively run optional Video Analytics software allowing intelligent video monitoring including real time notification of detected events and search capabilities selectable on a per camera basis.
- 45. Provide a LAN/WAN connection. Required software or hardware shall be provided for operating the digital recorder over the network free of charge. The remote operator shall also be capable of backing up still JPG images, and/or video segments to the local hard disk in AVI or proprietary file format.
- 46. Include a dynamic System Log to record and display information pertaining to alarm events, digital recorder reboots, and other related information, record/display hardware information pertaining to system recording successes and failures, and other related information.
- 47. Provide exportable system and event log files which may also be viewed and searched by date in the software interface.
- 48. Provide email notification to one or more recipients for video loss, motion, sensor, hard drive smart check, and system health events.
- 49. Provide a CPU performance meter clearly visible in the main GUI indicating the current CPU load status.
- 50. Include the ability to discover IP cameras from the network with an integrated camera discovery protocol and add them to your digital recorder from a single interface.
- 51. Include an option to enable Wide Screen support for monitors that output in 16:9 ratios. The feature shall allow the operator to switch between the standard 4:3 ratio and the widescreen 16:9 ratio.
- 52. Have the ability to customize cameras with operator-defined names. These names must be viewable and transferable after proprietarily backing up.
- 53. Provide the ability to Bookmark a video clip during search with the option to export bookmark data. Additional options shall include the ability to change the start or end time of the clip, add comments, change the title and add additional cameras.
- 54. Provide a Clip Backup feature allowing the backup of a single camera or multiple cameras at a time. Options include backup time frame, specific camera selection, memo inclusions, and the ability to include a copy of the proprietary Backup Viewer Software.

55. Have built-in motion detection for each camera (including all IP cameras). The operator shall be able to independently select the cameras motion detection area with the ability to draw up to 5 different motion detection boxes within the cameras view. The operator shall be able to adjust the cameras sensitivity independently.
56. Include Advanced Motion detection capabilities and when enabled, will allow for up to 15 motion boxes to be set. A combination of rectangles, circles and complex polygon shapes can be set within the Advanced Motion detection area.
57. Have the ability to hide cameras from general users, yet still record.
58. Include Active Directory integration (LDAP protocol) which allows domain user management tools to manage the digital recorder user accounts. Options shall include the ability to add and remove users from the digital recorder through group membership administration via a Windows domain ACP, and a single sign-on feature that passes digital recorder user log on credentials to the video management and remote software. Shall allow control of user passwords and configuration of permissions.
59. Be able to restart upon unpredictable power outage while restoring operator custom configurations.
60. Include a hardware monitoring (watchdog) system which will monitor the systems hardware devices. If the system should ever lockup the hardware monitoring system shall automatically reboot the system. Therefore allowing the system to begin recording immediately upon startup.
61. Provide for at least 100 different usernames (and passwords) to which specific privileges such as search, setup, PTZ, shutdown, and backup may be assigned. The administrator shall be capable of hiding any different combination of cameras from each of the users.
62. Have up to 16 sensor input capabilities, dependent on the network video device, which are capable of triggering alarm events or initiating recording. A pre-alarm recording feature shall be available to record up to 60 seconds of video prior to the sensor input being activated. A record of all sensor events shall also be provided.
63. Have up to 16 alarm output capabilities, dependent on the network video device, to activate external devices.
64. Provide the necessary software for image authenticity verification of each image recorded.
65. Be capable of programming the system locally through a standard PC keyboard and mouse or remotely over a LAN/WAN via a Remote Management Software Client.
66. Provide a camera sabotage function to allow an alarm event to occur when the camera field of view experiences significant pixel change (e.g. changing the view of the camera, obscuring the lenses, significant shaking or vibration, or blinding light). When a video loss event occurs, the operator shall have the option to enable an alarm beep or a custom WAV file audible alert utilizing the internal speaker of the digital recorder, and/or activate an alarm output.
67. Be capable of notifying the local operator by sound in the event video from a camera is lost (video loss alarm).
68. Be capable of triggering an external alarm device through a control output in the event video a camera is lost (video loss alarm). Dependent on network video device capabilities.
69. Be capable of triggering an external alarm device through a control output in the event power is lost (power loss alarm). Dependent on network video device capabilities.
70. Have pre and post alarm/motion recording. A pre-alarm recording feature shall be available to record up to 60 seconds of video prior to motion being detected. Furthermore a post-alarm recording feature shall be available to

- record up to 255 seconds of video after motion has left the motion grid.
71. Have the ability to playback recorded video on the main screen by simply clicking the middle mouse scroll button.
 72. Have the ability to automatically adjust for Daylight Savings Time changes, with no loss of video when the hour jumps forward or back.
 73. Allow an operator to flag video clips distributed across multiple cameras. This feature will allow the operator to back up all clips from multiple cameras in one operation from the backup menu screen. The feature will allow the operator to add a memo to each video clip for review at a later date.
 74. Provide dynamic abilities to record images including continuous, motion detection, alarms/events and according to a use defined time schedule.
 75. Provide a schedule from which the operator may choose whether the system will record based upon motion detection or continuously 24 hours a day, seven days a week.
 76. Accept special day preprogramming so recording schedules may be adjusted around holidays and/or special day events.
 77. Have intensive recording. This will allow the digital recorder to begin recording or boost recording speed based on sensor or motion detection.
 78. Be capable of automatically adjusting its recording resolutions and recording rates upon the activation of sensor input and/or motion detection.
 79. Have the ability to instant record any camera by simply double left clicking on the camera from the main screen.
 80. Include an Administrator privilege level, which allows the user to create, edit, and delete user accounts. Each account can be assigned different permissions that limit the usage of the system including:
 - a. Search
 - b. Set up
 - c. Pan/Tilt
 - d. Backup
 - e. Forbidden Cameras
 - f. Shut down
 81. The ability to enable or disable access by the Web Viewer Software, allowing a user to view live video using an Internet browser.
 82. The ability to adjust the resolution setting when sending video to remote clients.
 83. The ability to throttle the bandwidth of the digital recorder to ensure that images and system messages are delivered as quickly as possible within the capabilities of the network's available bandwidth.
 84. Include a User Management Console, which allows the user to create, edit, and delete user accounts. Each account can be assigned different privileges that limit the usage of the system. Privileges shall include, but not be limited to, the following functions:
 - a. Search
 - b. Setup
 - c. Pan/Tilt
 - d. Backup
 - e. Shutdown
 - f. Intensive
 - g. Relay Out

- h. Pan/Tilt Advance
 - i. Hidden Cameras/Audio
 - j. User Ranking
 - k. Auto Log Off
85. Provide the user ability to obtain the software version of the digital recorder.
86. Run a series of self-tests during power up, and display messages as the various hardware and software sub-systems are activated. After power up, the digital recorder's software must automatically load and display the main screen.
87. Display the camera status for each camera next to the camera number (or name) in the video display area. The information must include:
- a. Camera number and custom name
 - b. Recording status, which must show whether a camera is currently recording continuously, or whether a camera is recording based on motion.
 - c. Special recording status, which must indicate whether a camera's associated sensor has been activated, and/or when the user activates the instant recording option for the selected camera.
88. Offer the following screen division sets (depending on the model):
- a. Display the first four videos (1–4) in the video display area.
 - b. Display the next four videos (5–8) in the video display area.
 - c. Display the next four videos (9–12) in the video display area.
 - d. Display the next four videos (13–16) in the video display area.
 - e. Display all sixteen (16) videos in the video display area.
89. Have the ability to adjust each video input's brightness, contrast, and hue, to optimize the clarity and detail of recorded video.
90. Incorporate motion detection, including the ability to create multiple detection regions for each video input.
91. Include the ability for post-alarm recording, which must record video for a specified time before and/or after a motion or sensor alarm has occurred. The time period must be selectable from zero (0) to sixty (60) seconds.
92. Include a video loss alarm function to allow an alarm event to occur when a camera loses the signal for any reason (e.g. camera power failure, cable being cut, camera damage, etc.). When a video loss event occurs, the operator shall have the option to enable an alarm output.
93. Include Alarm Monitor software to stream video across a LAN to a client PC when an alarm is detected on the unit. The operator shall have the ability to stop, play forward and backward, frame by frame or at real speed, the video that streams across. The program must constantly monitor for a signal from the digital recorder, and when an alarm signal is detected the Alarm Monitor must notify the operator of an event. The Alarm Monitor image viewer shall also allow the user to search through past events that have been recorded on the client PC.
94. The Instant Recording feature allows users to manually initiate recording on a specific camera, overriding the current schedule.
95. Provide, through the remote software, the ability to export single images in the JPG file format and save video clips in the AVI format. A digital signature must be attached to every JPG and AVI file exported by the unit for use with the bundled Digital Verifier application. This function must be unique to the unit and its verification software, and shall not interfere with viewing files using other applications.

96. Offer on screen PTZ camera control by clicking and dragging the mouse over the live video display and include play controls to play back the recorded video either forward or reverse, at multiple speeds.
97. Include the ability to search by using fast forward or rewind. Using the feature the operator shall be able to search frame by frame using any number of cameras and have the ability to speed up or slow down the speed of playback using a slow/fast slide bar.
98. Include an index search. Using this feature the operator shall be able to search through previously recorded video based on motion detection, sensor trip or instant record.
99. Include a preview search function. Using this feature the operator shall be able to search using a 24-hour visual overview of one single camera by separating a 24-hour period into 24 images, each one representing the first second of each hour. The operator must then have the ability to drill down to the search to 10-minute increments and then 1-minute increments by simple double left clicking on a displayed image.
100. Include a panorama search function. Using this feature the operator shall be able to search one camera frame-by-frame using a 16-image grid.
101. Include an object or post motion (forensic) search. Using this feature the operator shall be able to search through previously recorded video for motion within an operator defined field.
102. Include a status search. Using this feature the operator shall be able to see a single camera on the screen and, using a split view, view each frame sequentially side by side.
103. The ability to search recorded video on the main screen by simply clicking the middle mouse scroll button and selecting rewind and fast forward options.
104. Provide simultaneous playback viewing while recording live images, and backing up recorded images in true multiplex operation.
105. Incorporate a software watchdog for restarting the system in the event of a system lock-up.

MULTI-SITE MANAGEMENT SOFTWARE (ENTERPRISE VMS): The digital recorder shall come with multi-site management software free of charge. The Digital Recorder Manufacturer shall provide additional copies of the Multi-Site Management software via the web at no additional charge, along with upgrades free of charge during the product warranty period.

The MULTI-SITE MANAGEMENT SOFTWARE shall include, as a minimum, the following benefits/features/functions/specifications. The Multi-Site software shall:

106. Provide the operator, with administrator privileges, of remotely administering most of the functions that the user has locally, including administration privileges, camera/PTZ adjustments, frame setup, recording schedule, network configuration, and log file retrieval and viewing. The administrator shall also be able to add, delete, or update users when connected to the system remotely.
107. Provide configuration of user accounts with a multitude of assigned privileges that allow or deny access to different functions, therefore ensuring that only authorized personnel are allowed to log in to the Digital Recorder and perform operational functions.
108. Be able to perform remote health check of all systems connected; monitoring Warning and Failures counts on hard drive status, recording status, video loss and disk free space %. The Health check feature shall also provide:
 - a. Selectable actions which include: Pop up on Failure/Warning or Voice Warning on failure.
 - b. The ability to define interval checks by day (up to 7 days), hour (up to

24 hours) or minutes (minimum 10 minutes).

- c. E-mail notification options for warning and failure events.
109. Be able to send email alarms for motion detection and sensor events.
 110. Use the same user accounts that the digital recorder uses locally.
 111. Provide a detailed list of log events with the Log Manager.
 112. Be able to support multiple digital recorder connections simultaneously and control the digital recorders using a single PC workstation with appropriate network connectivity.
 113. Be capable of supporting up to 4 monitors. Shall be capable of enabling the Map Editor, Search windows and Live Display on any of the 4 monitor outputs.
 114. Be capable of displaying up to 64 cameras in live view on one monitor or displaying a multitude of different live view camera divisions across 4 monitors.
 115. Offer a highly configurable UI that provides user-friendly options including toolbar selections, a detailed Connection list providing individual NVR information, icon size selections, viewing pane selections and various main window selections including multiple open windows organized by tabs at the top of the Live View area.
 116. Be capable of exporting AVI video and jpeg images - with a digital signature.
 117. Be able to create custom interactive maps and incorporate cameras and/or sensors to locations on the map, link multiple maps, use linked internet maps (Google, etc.). Shall also provide support for AutoCAD (*.DXF, *.DWG) and Image files (*.JPG, *.BMP, *.WMF, *.EMF).
 118. Allow 2-Way live audio communication with the digital recorder.
 119. The Multi-Site software should provide the following Search capabilities:
 - a. Multiple Search: simultaneous search from multiple NVRs on a single screen.
 - b. Preview Search: allowing a single day of video to be searched by 1-hour, 10- and 1-minute blocks of time.
 - c. Index Search: provides search based on sensor, motion and instant record events.
 - d. Status Search: displays a timeline graph allowing recorded video to be located and instantly played from a selected time.
 - e. Point of Sale search: allowing search on information transmitted during POS transactions.
 120. Provide detailed Search functions that include multiple Search methods, individual camera or screen division selections, Bookmarks for quickly marking video clips for later review or backup, JPG or AVI save file options, increase/decrease playback speeds, zoom in/out options, hour/minute control bars and the ability to Sync the playback of multiple cameras.
 121. Be able to backup video data in proprietary format, AVI and/or JPEG. AVI backup shall provide the operator with an AVI duration selection and Quality selection.
 122. Be capable of automatically transferring live images via TCP/IP to an emergency client workstation in the event a sensor is activated. The emergency agent software shall be capable of automatically opening without assistance from the operator.
 123. Be capable of alarm monitoring, keeping track of all incoming motion, alarm input and video loss alarms in real time. Filter options shall be included providing the operator with the ability to select a status level of the alarms. Alarm event indicators shall be color coded and include Video

- Loss, Motion, Sensor, Relay, No Signal, Write Fail, Connected and Disconnected.
124. Provide a shortcut list in the main screen that displays the following:
 - a. Server List: Displays all added NVRs and allows users to connect to NVRs and their associated cameras quickly
 - b. User Screen: Provides list of customized screens, allows adding new screens and editing existing screens.
 - c. Window List: Organizes open windows into categories – Live Windows, Search Windows and other active windows.
 - d. Hot Spot: Feature allowing users to zoom in on an AOI (area of interest).
 125. Provide a Right-Click Live Camera option that allows for pausing Live Video, starting Live Video (after pause), Capturing a JPG snapshot, Full screen option, setting resolution and control of video screen display options.
 126. Provide a Right-Click DVR option that allows for instant DVR and Camera connect/disconnect, Search feature, POS On/Off, Device Configuration, and Network/Clip backups.
 127. Provide a Live Camera Tool bar that provides Full Screen options, ability to drag live cameras from one screen to another, options to enable an on-screen PTZ compass, Cloning Live View in another window and Screen division options.
 128. Provide a Lock List function that locks specific functions based off a user-defined waiting period. The list includes, but is not limited to:
 - a. DVR configuration
 - b. Map editing
 - c. Log Viewer access
 - d. Health Check status
 - e. Search
 - f. Shutting down VMS software
 129. Provide a rich Network Backup feature that allows the operator to backup any or all cameras on a selected NVR to a local or network drive. Functions shall allow for specific day selection and hour to minute selection blocks within each day. No Data, Existing Data and Selected Data blocks shall be color coded for easy to identify backup options. A download status bar shall provide Total and Current percentage completion times along with a Total overall file size (indicated in KB/s) indicator.
 130. Provide a Clip Backup feature allowing the operator to backup one or more cameras to a local drive, CD/DVD or USB device. Functions shall include individual camera selection, backup target device, backup start and end time selections, clip information options including name/memo, and the option to include the backup viewer software with the data clip. Packet size configuration shall also be available providing the operator with the ability to lower the clip size for low bandwidth transmission environments.
 131. Be capable of displaying POS text overlay on POS data within the live video display. Shall provide multiple options for searching POS data recorded on DVRs. POS search should be defined through a user defined item name or selectable from a predefined item list. Search filter options should provide a value definable selection based off specific value conditions.
 132. Provide the ability to Customize Screens by allowing the user to create groups of cameras called screens and customize the organization of the cameras. Each screen should allow up to 64 different cameras.

133. Have the ability to auto save settings on log-off and auto Load settings on log-on.
134. Have a configurable alert sound setting for DVR disconnections from the VMS software.
135. Have the option to enable a Map Alarm Sound on an associated event.
136. Have the option to enable the Live Video window as a top-most application.
137. Have the ability to enable "pop up" live video of recorder associated with an alarm or event.
138. Provide the option to Auto-Switch the time between camera sequencing.
139. Have the ability to enable a full screen channel when live mode display is double-clicked.
140. Provide the user ability to hide the following on screen display text (OSD):
 - a. Hide all OSD
 - b. Hide channel number
 - c. Hide server name
 - d. Hide camera name
 - e. Hide 64 division to disable the 64-channel screen division option
 - f. Hide PTZ overlay
 - g. Hide Time/Date
141. Provide the option to enable PTZ ACP in advance mode on screen.
142. Allow screen ratio configurations of None, Original, 4:3 & 16:9 (Widescreen).
143. Provide an option for Full Screen Channel on motion and sensor alarms. Shall allow for user defined Full Screen durations of up to 100 (seconds) and an option to Ignore alarm events after Full Screen configurable in seconds up to 100.
144. Have the ability to define schedules to discard alarms. Shall provide a user configurable setting to filter, by category, including Motion, Sensor, Sensor (Camera) and Relay.
145. Offer the operator a user-friendly DVR Site List page displaying a list of all added recorders. Shall provide sections to add all DVR information including:
 - a. Server Name
 - b. IP/URL
 - c. Port #'s
 - d. User ID
 - e. Password
 - f. DVR Group
 - g. Additional information: Contact information including Manager Name, Telephone #, Police and Fire department information.
146. Provide the operator the ability to edit all information of any DVR in the list of connected recorders within the DVR Site List page.
147. Provide an option to custom name Sensors and Relays of any DVR in the list of connected recorders within the DVR Site List page.

MULTI-SITE SYSTEM HARDWARE for the NVR

Single / Multi-site software: The recommended hardware and operating system configuration for a PC workstation shall have:

148. Intel Quad Core i7 processor (or equivalent)
149. 4 GB System Memory
150. DirectX 9 or Higher
151. ATI 7770 Video Card (or equivalent) / Intel HD2000 onboard graphics (or newer)
152. 512k Network Connection
153. TCP/IP Installed
154. Microsoft Windows® 7, Windows Server 2008/2012
155. 1280 x 1024 Optimal Display Resolution

INTERIOR NETWORK VIDEO CAMERA – The network video camera shall include, as a minimum, the following features/functions/specifications. The network video camera shall:

1. Include a high quality Progressive CMOS image sensor.
2. Include a M12 Lens mount and be offered with the following lenses: 2.3mm, 3.6mm, and 6mm. Each lens option will also have a distinct part number OE-C6123-W2, OE-C6123-W3, and OE-C6123-W6.
 3. Include wide dynamic range (WDR) function balancing situations with dark lighting conditions in some areas.
 4. Operate with a minimum illumination of 0.1 lux in day mode and 0.01 lux in night mode at 30IRE.
5. Have a white balance function that is adjustable through the camera's web interface.
6. Have a white balance range of at least 2700K to 7800K.
7. Have a backlight compensation function that is adjustable through the camera's web interface.
8. Have an auto gain control function that is adjustable through the camera's web interface.
9. Include 2 alarm inputs used for activating alarm events.
10. Include 1 audio input and 1 audio output.
 11. Includes 1 BNC connector for Analog video output.
12. TRANSMISSION CAPABILITIES – The network video camera shall provide the following characteristics/features/functions. The network video camera capabilities shall:
 - A. Be capable of encoding video for network transmission across a LAN or WAN.
 - B. Be capable of compressing and transmitting video data using both MJPEG and H.264 compression methods
 - C. Be compliant with the ONVIF standard for Network Video Transmitters (NVT)
 - D. Have user authentication for secure video transmission, and shall be capable of up to 20 user accounts.
 - E. Be capable of providing up to four individually configured H.264 video streams, or three H.264 and one MJPEG video streams.
 - F. Be capable of providing video in MJPEG and H.264 at resolutions as high as 2304 x 1296, or 3MP.
 - G. Be capable of providing video at the following resolutions: 2304 x 1296, 1920 x 1080, 1280 x 1024, 1280 x 720, 1024 x 768, 800 x 600.
 - H. Provide 3MP video at a maximum rate of 30 Images per Second (IPS) when set to H.264.

- I. Provide 2MP video at a maximum rate of 30 Images per Second (IPS) when set to MJPEG.
 - J. Allow the user to set the Group of Pictures (GOP) rate for the H.264 streams to fine tune the video transmission.
 - K. Allow the user to set the H.264 profile as H.264 baseline profile, H.264 main profile, or H.264 high profile to control how the camera encodes video.
 - L. Include framerate control that allows the user to enter any rate from 0-30 (dependent on resolution).
 - M. Include a video compression setting that allows the user to set the video compression bit rate.
 - N. Include the ability to switch from Variable Bit Rate (VBR) mode to Constant Bit Rate (CBR) mode.
- 13. Include a Motion Detection function.
 - i. The Motion Detection function must allow for 10 separate motion detection areas.
 - ii. The Motion Detection function must allow for configurable sensitivity and motion detection event durations
 - iii. The Motion Detection function must have configurable actions that occur when motion is detected, including sending a notification email with a JPG attachment, triggering the alarm output on the camera, and recording the video stream for a pre-defined duration to an internal microSD card.
 - 14. Have the ability to sync with an NTP server.
 - 15. Have the ability to be discovered over multiple sub-nets with the use of a Camera Discovery Tool.
 - 16. With the Camera Discovery tool have the ability to set IP fields, camera settings, and program firmware on multiple cameras at the same time.

EXTERIOR NETWORK VIDEO CAMERA – The network video camera shall include, as a minimum, the following features/functions/specifications. The network video camera shall:

- 1. Include a high quality Progressive CMOS image sensor.
- 2. Have an ingress protection (IP) rating equivalent to IP67 against the ingress of dust and moisture.
- 3. Include wide dynamic range (WDR) function balancing situations with dark lighting conditions in some areas.
- 4. Operate with a minimum illumination of 0.02 lux in day mode and 0 lux in night mode (@ F1.5) at 30IRE.
- 5. Include a mechanical IR cut filter that is removed during low light conditions to improve low light imaging. This shall be referred to as a True Day/Night function.

6. Include a motorized auto-focus lens with a length from 2.8mm to 12mm.
7. Have a field of view from 91° at the widest view to 27° at the narrowest view.
8. Have Auto/Manual Iris control that is adjustable through the camera's web interface.
9. Have a white balance function that is adjustable through the camera's web interface.
10. Have a white balance range of at least 2000K to 10000K.
11. Have a backlight compensation function that is adjustable through the camera's web interface.
12. Have an auto gain control function that is adjustable through the camera's web interface.
13. Include 1 alarm inputs used for activating alarm events.
14. Include 1 alarm output used for activating alarm events.
15. Include 1 audio input.
16. Include 1 BNC connector for analog video output.
17. TRANSMISSION CAPABILITIES – The network video camera shall provide the following characteristics/features/functions. The network video camera capabilities shall:
 - A. Be capable of encoding video for network transmission across a LAN or WAN.
 - B. Be capable of compressing and transmitting video data using MJPEG and H.264 compression methods.
 - C. Be compliant with the ONVIF standard for Network Video Transmitters (NVT).
 - D. Have user authentication for secure video transmission, and shall be capable of up to 20 user accounts.
 - E. Be capable of providing up to 2 individually configured H.264 video streams or 1 H.264 stream and 1 MJPEG stream
 - F. Be capable of providing video in MJPEG and H.264 at resolutions as high as 2592x1520 or 4MP.
 - G. Be capable of providing video at the following resolutions: 2592x1520, 2560x1440, 1920x1080, 1280x720, 720x576.

- H. Provide 4MP video at a maximum rate of 25 Images per Second (IPS) when set to H.264.
 - I. Provide 2MP video at a maximum rate of 5 Images per Second (IPS) when set to MJPEG.
 - J. Allow the user to set the Group of Pictures (GOP) rate for the H.264 streams to fine tune the video transmission.
 - K. Include framerate control that allows the user to enter any rate from 0-30 (dependent on resolution).
 - L. Include a video compression setting that allows the user to set the video compression bit rate.
 - M. Include the ability to switch from Variable Bit Rate (VBR) mode to Constant Bit Rate (CBR) mode.
 - N. Include the ability to enable Smart Encoding to allow the user to dynamically reduce their throughput.
18. Include a Motion Detection function.
- A. The Motion Detection function must allow for 4 separate motion detection areas.
 - B. The Motion Detection function must allow for configurable sensitivity and motion detection event durations.
 - C. The Motion Detection function must have configurable actions that occur when motion is detected, including sending a notification email with a JPG attachment, triggering the alarm output on the camera, and recording the video stream for a pre-defined duration to an internal microSD card.
19. Have the ability to sync with an NTP server.
20. Have the ability to be discovered over multiple sub-nets with the use of a Camera Discovery Tool.
21. With the Camera Discovery tool to have the ability to set ip fields, camera settings, and program firmware on multiple cameras at the same time.

**FAIRFIELD AREA SCHOOL DISTRICT
BID SUBMISSION FORM
DIGITAL SURVEILLANCE EQUIPMENT**

I/we hereby submit the following as our bid for the purchase of digital surveillance equipment as specified by the Fairfield Area School District.

24 EXTERIOR CAMERAS: \$ _____

10 INTERIOR CAMERAS: \$ _____

1 NETWORK VIDEO RECORDER: \$ _____

TOTAL COST: \$ _____

Authorized Signature _____ Date _____

Company Name _____

Contact Person _____

Address _____

Telephone (____) _____

Accepted By _____ FASD Date _____

